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RESEARCH IN VOCATIONAL EDUCATION.

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THE MANY ACTIVITIES RESULTING FROM THE RECENT EMPHASIS UPON IMPROVING EDUCATION SHOULD CONCERN THE MAJOR PROBLEMS, RESEARCH TOPICS, AND PRIORITIES IDENTIFIED THROUGH A SUGGESTED SYSTEM OF VOCATIONAL EDUCATION BOOKKEEPING IN WHICH RESULTS ARE REVIEWED BY APPROPRIATE STAFF AND RESOURCE PERSONNEL FROM BUSINESS, INDUSTRY, COLLEGES, AND UNIVERSITIES. THE FOLLOWING AREAS OF CONCERN WERE IDENTIFIED AT A NATIONAL CONFERENCE IN 1956--(1) COMMUNITY COOPERATION FOR MANPOWER DEVELOPMENT, (2) PREPARATION FOR THE WORLD OF WORK--WHAT BUSINESS AND INDUSTRY WANT FROM VOCATIONAL EDUCATION AND WHAT THE SCHOOLS SHOULD DO, (3) VOCATIONAL EDUCATION--PARTNER IN LABOR DEVELOPMENT, AND (4) VOCATIONAL PREPARATION FOR INNER-CITY YOUTH. THESE AREAS CONTAIN PROBLEMS OF A RESEARCHABLE NATURE. "IN TODAY'S SELLER'S MARKET HOW FAR HAVE THE STANDARDS OF EMPLOYMENT SLIPPED," IS SUGGESTED AS ONE OF 16 QUESTIONS WHICH COULD BE ANSWERED THROUGH A DESCRIPTIVE SURVEY. ONE OF 12 EXAMPLES SUITABLE FOR DEMONSTRATION PROJECTS IS, "INDUSTRY CAN SEND CRAFTSMEN, TECHNICIANS, AND RESEARCH PERSONNEL INTO THE SCHOOLS FOR TEACHING PURPOSES." AN EXAMPLE FROM 10 SUGGESTIONS OF RESEARCH IN MODIFYING ORGANIZATION OR PRACTICE IS, "CAN THE PRESENCE OF WORK CONDITIONING COUNTERACT THE EFFECT OF THE POOR FAMILY'S ATTITUDE ON THEIR CHILDREN AND THE ABSENCE OF OBJECTIVES OR GOALS COUPLED WITH THE LACK OF DIGNITY ON THE PART OF THESE YOUTH." SUGGESTIONS FOR BASIC RESEARCH CONCERN THE MOTIVATION OF MINORITY GROUPS, PERSONALITY DEFECTS AND MENTAL HEALTH RELATIVE TO EMPLOYMENT PREPARATION, COMMUNICATION DISABILITIES OF THE DISADVANTAGED, AND TRANSFERABILITY OF WORK HABITS AND ATTITUDES. (EM)

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RESEARCH IN VOCATIONAL EDUCATION

What is vocational education research? Recently, great emphasis has been placed on the improvement of educational practice. To this end the federal government as well as foundations and state and local agencies have provided considerable monies to support research and related improvement activities. These activities have included the study of vocational education problems; discussion of these studies among colleagues, professional associations and other organizations; development of experimental. pilot and demonstration programs and system-wide application of total programs or facets of particular programs.

Identification of problems. From my point of view, all of the activities are legitimate parts of a program of vocational education research. As individuals concerned with vocational education, we need opportunities to identify problems.This may mean that our "bookkeeping" procedures need to be modified or new procedures initiated so that the information at our finger tips begin to describe our major problems. It is important that as a matter of routine, personnel review these data and attempt to define major problems and/or clusters of problems. In most large city school systems there is a monthly or six-weeks compilation of attendance data, a review of these summaries by the superintendent and his cabinet, and deliberations directed toward the implication of such data for the administration of the system. I am suggesting that results of vocational educational bookkeeping should be packaged and similarly reviewed by appropriate staff with the participation of resource personnel from business and industry and college and

and universities. Outcomes from these reviews could include identification of major problems, researchable topics and priorities for problem investigation.

Within the last several years in some city school systems as well as colleges and universities one might suspect that certain projects have been launched because "outside" monies were available, although the institution gave such an activity a low priority. It would appear that today in many situations there is more money available than trained personnel and that institutions have to give some order to the activities of limited personnel resources.

Research activities. The identification of problems in an area such as, vocational education, is an initial step. The second step is giving priority to the investigation of the problems, and the third is one of developing a research framework within which the proposed investigations could be given some degree of order. Four categories (1, pp. 125-26) that could be used include: (1) descriptive survey; (2) demonstration project; (3) the researchable problem involving a modification in organization or practice--with the modification serving as a measurable variable; and (4) basic or applied research of a conceptual nature.

The survey requires the collection of data that can be analyzed for descriptive purposes.

The demonstration project is an attempt to test a hunch or postulate without becoming involved with the time-consuming complexities of setting up elaborate formal research designs. Some demonstration activities have such obvious merit that what they

require is not research but implementation. The evaluation of such demonstrations is most essential and should be based on how well the results meet the criteria set up in advance for measuring achievement of the objectives of the activity.

The researchable modifications involve the observable manipulation of variables and may involve control groups for comparison purposes, but do not utilize randomization or the careful control of most reactive measures. The evaluation of these activities can be relatively sophisticated.

Basic or applied research activities are conceptual in nature when true or quasi-experimental designs are utilized, or where data are collected in other acceptably rigorous ways.

Program reorganization. The results of these research activities should lead to modification in the educational programs carried out by a particular school system or constellation of systems. Informing appropriate members of the hierarchy of the results of these research activities may be the most crucial part of a well run research program. System-wide application of a pilot program or a particular practice is dependent on training or retraining personnel, packaging necessary materials, and servicing the program with appropriate supportive resources.

Current Areas of Concern in Vocational Education

A number of large cities in this country have been collectively concerned with the problems of vocational education for sometime. The Research Council of the Great Cities Program for School Improvement held a national conference in Chicago, October 25-27,

1956, with the theme, "Expanding and Improving Vocational Education at the Secondary and Post-Secondary Level." R. Sargent Shriver, Jr., then President of the Chicago Board of Education, in the featured address concluded, "I hope to have played a small part in conveying to you... some feeling for the public desire to improve the quality of our educational program--not merely to add to the quantity or to the utility of the courses we teach." (2).

The Research Council has continued to study Vocational Education (3) (4) (5) (6) (7) and is currently engaged in a development activity to mobilize and coordinate the resources of the cities, business, industry, labor, government, and schools to initiate action to provide, "Changing Education for a Changing World of Work." In an initial series of regional conferences participants examined major areas of concern to the total community and developed a number of suggestions and questions that could form the basis for action at the local level. The following current areas of concern in vocational education were identified and studied by leading scholars, business, industrial and governmental leaders, and knowledgeable educators (8) (9). A condensation of some of their deliberations follows:

Topic: Community Cooperation for Manpower Development.

The scientific and technological revolution of the past twenty-five years has left in its wake vast needs and opportunities of equal dimension. The development in the applied sciences, industry and new economic and social relationships signal the need for utilizing each American's capacity to the fullest because his skill potential is needed in our economy, because there must be a better way of subsistence than human vegetation shrouded in public assistance. If we are to believe that retraining will occur three to six times during the normal working life,

that leisure should be individually and socially useful, that occupational training should be compensated for as part of our economic investment, the schools must serve as the common denominator for democratic participation.

In a complex metropolitan area with its "power structures" and "establishments" dialogue must be made meaningful between the schools, the employment service, the city, the community action groups along with labor, management and the churches. Community action centers must begin to relate to vocational rehabilitation, manpower training, basic education, pre-vocational instruction and pre-employment referral. Public assistance agencies should realize the capabilities of others in the community. The anti-poverty fighters should realize that other agencies can and should share in this war, the employment service should recognize that referrals should take into account the individual as well as the work station, the neighborhood youth corps should design activities to serve as a bridge to employment, and they should begin to tear away their insulation from the rest of the community.

Topic: Preparation for the World of Work--What Business and Industry Want from Vocational Education--What the Schools Should Do.

At a time when the economy makes increasingly sophisticated demands on the national work force, the businessman is confronted with a number of disquieting elements which are in evidence in the labor market:

--- Why can't job applicants understand basic instructions in a testing situation?
--- Why is spelling yet a formidable hurdle for a graduate of one of our high schools?
--- Why does a student recoil in surprise upon learning that business regards 20 or 30 days of school absence per year as an indicator of inadequate employee responsibility?
--- Why does it surprise the applicant that business has difficulty placing the youth who is indecisive about a career preference and merely takes the position he will do "anything for a living."

It is clear that we currently face a vocational dilemma which is characterized by many unfilled jobs and an equal number of unqualified applicants. Individuals are needed with a capability to assimilate on-the-job training. Careers in industry have their rewards and more could be done to make students aware of them. The exposure of students to industry is a developmental process that should begin early in the secondary school and should include programmed, first-hand observations and sampling of work tasks.

Students should be motivated toward the maximum application of their talents and helped to recognize the importance of responsiveness to change. There needs to be more emphasis in school on "general" education as typified by the 3 R's and basic science. If high school students are deficient in skills of spelling, grammar and reading usually acquired in the elementary school remedial aid should be available.

What does business and industry expect from vocational education? Briefly, a predictable level of achievement in: PROBLEM SOLVING, COMMUNICATIONS and PERSONAL RESPONSIBILITY.

There is urgent need for closer and more effective relationship between the educator and the businessman. There must be a willingness on the part of both to experiment with new concepts, and in particular, ways must be found in which the business community may be put to greater use in the educational process.

Topic: Vocational Education--Partner in Labor Development.

We need a high-school level vocational education which is a part of a total system of education that provides every student with maximum opportunity for self-development. It is an unhappy fact that many school administrators have been so pre-occupied with the needs of their college-bound students (one-third of the student body) that they have been inattentive to the two-thirds of the students who do not plan to go on to college.. Under the best of circumstances, there will continue to be millions of young people who won't go to college; who don't want to go to college; and who should not have to go to college to establish a place for themselves in our society.

Educationally, we have widened our conception of what is vocational. English and mathematics are as much a part of vocational education as mechanical drawing and the use of tools. And it is not simply as tool subjects that vocational students need the liberal arts. Literature, history and the social studies provide the level of human dignity and purpose that every citizen needs in twentieth century society. A new kind of curriculum needs to be built which makes rigorous general education meaningful to vocational students.

Educators, government officials, management and labor can develop new and creative programs that will reach countless young people who find the traditional educational mold uncongenial and who, in the normal course of events, would leave school and drift into low skill, temporary jobs. The skilled crafts are at the very heart of American production and they will continue to be so for the foreseeable future. These crafts will be made up of young people who have had a quality high school education designed

to meet their needs and in most cases supplemented with apprenticeship training or post-high-school vocational and technical training. There will also be a continuing need for unskilled and semi-skilled workers in production and especially in the service industries. These too, if they are to be more than drudges, need the best that the schools can give them.

If vocational education is to relate realistically to the labor market, it must strip away all of the insulation which separates the vocational school from its community. It must serve the training and re-training needs of every segment of the community. Every possible artery between the classroom and the community must be kept open. The more closely the labor, industry, government and other education institutions are involved with the school, the better will the vocational school relate its educational program to the realities of the labor market.

Topic: Vocational Preparation for Inner City Youth

Scientific knowledge is available to nations of the world which, if implemented immediately, would have a striking impact on cultural deprivation in the next generation--planned population control, foodstuffs adequate to the physical well-being of man, adequate housing facilities, and literacy education for whole populations. If the present rate of increase of culturally disadvantaged minority groups living in our inner city areas continues, their numbers will increase greatly within the next two decades unless as indicated there is a forceful immediate program to reduce family size, strengthen the family as a unit, provide basic as well as advanced education, and improve the living environment of the inner city.

What is the role of the school in the vocational preparation of inner city youth? The climate in the national work force is undergoing dramatic changes. Competence is the criterion used by employers according to union and management. The schools face a serious challenge in convincing the inner city youth that the avenue to successful employment of permanence and substance is open to minority youth if only he will prepare himself to satisfy the standards for initial employment.

The following is a list of personality and intellectual characteristics of inner city youth:

Personality structure: alienated, anti-intellectual, content- and problem-centered, not abstract or form-centered, lack of orientation toward the future, lack of formal language, lack of self-confidence, feelings of inadequacy, negative self-image, inability to assume responsibility, poor capacity to work cooperatively, poor capacity to adjust appropriately to peers.

Intellectual characteristics: unable to focus on task overtime, difficulty in shifting modes of responses, inability to resist distraction, public language used but not formal language, difficulty to assimilate new intellectual experiences, self-defeating behaviors, expectancies of failure, personal unworthiness.

How to overcome these deficiencies and develop positive motivation and job attitudes is the most difficult task which faces the schools in the next two decades. Examination of the aforementioned characteristics suggests certain guidelines of behavior for improving the school program for inner city youth.

--- A consistently friendly approach.

--- Keep instruction simple, direct and immediate and centered on immediate activities.

--- Repeat instructions and give periodic checks to see that they are being followed carefully.

--- Initially, carefully guide and reinforce desirable behaviors with immediate rewards. Intermittent reinforcement should be gradually introduced. Constant praise or reward is not as effective overtime as is intermittent reinforcement.

--- Develop more adequate ability in language skills. If necessary, conduct special sessions. Make sure that all words used are understood by the recipient.

--- Do not place too much emphasis on future possibilities. Emphasize the rewards present in the here and now for desirable behaviors.

--- Be alert to stress in minority groups of culturally deprived. Attempt to provide built-in stress relievers which will reduce conflict situations.

--- Do not provide task instructions which are comprehensive and require continued understanding overtime. Rather break the task into smaller units administered at efficient periodic intervals.

--- Expect defeatist and negative attitudes which must be adroitly handled to maximize optimal performance.

--- Be objective, firm, and fair. Hold to standards of performance which are consistent.

Numerous programs have been and are being developed to meet these needs of inner-city youth. Included in these are program

clusterings including The Neighborhood Youth Corps, Skill Centers, Junior Achievement, Work Study, Job Centers, etc. These programs are many and varied and are catalogued in several publications. However, an ongoing systematic evaluation of these programs needs to be carried forward. Such evaluation should come from a supportive rationale in which the schools are attempting to ascertain what is working and what is not working. The following criteria are suggested as yardsticks of measurement:

1. Are the intellectual and personality deficiencies of inner city youth recognized and compensated for by adapted program content and instructional methods?

2. Are planned measures to inspire and instigate desirable attitude changes articulated meaningfully and systematically in the program?

3. Have factors of monetary and other material awards been determined to provide positive reinforcement to motivation?

4. Has adequate consideration been given to possibilities inherent in the program to strengthen and improve the family unit?

5. Does the plan provide ways and means of bringing about positive changes in the living environment of the home?

6. Have the instructional staff or group leaders been selected because of demonstrated competency to work successfully with inner city youth?

7. Are plans developed or implemented to provide continuous in-service training to those who work in close relation with inner city youth?

8. Have the essential channels of communication between the inner city youth and business and industry been established and kept open?

9. Are there built-in provisions which provide for a systematic evaluation overtime so that a feedback of findings can be made into the program with resultant changes and improvement ?

Researchable Questions

The prior topical discussions raise many questions that need to be answered in a thoughtful, organized manner. Using the framework presented in the opening section of this paper a number of these questions are now presented.

Category 1: Descriptive Survey

The following questions could be answered by collecting data through a survey and analyzing such data for descriptive purposes:

1. What are the needs of employers? What aspects of training will employers accept?

2. Who are the people we have within our schools? What are their characteristics?

3. What lower level occupational clusters are there in this community? What other occupational clusters are there in this community? What are the employers' job specifications?

4. What has happened to graduates one year after graduation? ___Two years?___Five years? ___Ten years? ___Twenty years? Are students using vocational education as a spring board to allied jobs?

5. What is the employment market for dropouts in this community? ___For high school graduates?

6. Does business and industry in this community require two to four years of college for entry to jobs that don't require a college background?

7. How much contact do individual vocational programs have with the business community? ___With the labor movement?

8. Does the school carry on an informational program from kindergarten on to explain job opportunities, qualifications needed, training required, responsibilities involved?

9. Of every 100 students in this school system, how many enroll in colleges and universities?___How many complete two years?___How many complete four years?

10. In today's seller's market how far have the standards of employment dropped?

11. What are the immediate goals of inner-city youth in this city?

12. What are the selection qualifications at the various entry jobs?

13. What work opportunities await university youth after graduation?

14. What feedback does the school system get from participation in placement activities?

15. How close is the contact of teachers with the world of work so that they can realistically interpret occupational needs for boys and girls?

16. Why have children dropped out of school in this city?

Category 2: Demonstration Project

The demonstration project is an attempt to test a hunch or postulate without becoming involved with the time consuming complexities of setting up elaborate formal research designs. Some demonstration activities have such obvious merit that what they require is not research but implementation. The evaluation of such demonstrations is most essential and should be based on how well the results meet the criteria set up in advance for measuring achievement of the objectives of the activity. The following are illustrative:

1. A mature educational setting can contribute greatly to the success of returning dropouts.

2. Coordinators working with business industry and the schools could improve relationships, program offerings and placement of students.

3. Special training for specific job skills could be done in three ways: (1) low level skill jobs may be best done on an on-the-job basis; (2) a skill center for youth and adults could perform preparatory upgrading and retraining; (3) post-high school vocational and technical centers could provide education for those jobs requiring a full high school education plus specialized training.

4. An employment service counselor may work in the school on a full-time basis providing placement counseling.

5. Provide baby sitting services for women enrolled in literacy work or other training.

6. Increased stature, status and respectability could be given to the skilled and technical occupations.

7. Educators have to develop approaches to industry so that industry will listen and find it fruitful to cooperate.

8. Training projects should involve industry and specifically the people who are expected to use the products of the courses.

9. Trade and industrial instructors who have had a relatively narrow training might return to the campus to get a liberal arts education.

10. Vocational teachers could return to business or industry for a sabbatical leave with business or industry providing the salary difference.

11. Place vocational teachers on a 12-months contract so that the school can be assured of a continued planned contract with the business or industrial community.

12. Industry can send craftsmen, technicians and research personnel into the schools for teaching purposes.

Category 3: Researchable Modifications

These activities involve the observable manipulation of variables and may involve control groups for comparison purposes, but do not utilize randomization or the careful control of most reactive measures. The evaluation of these activities can be relatively sophisticated. Following are several examples:

1. Vocational education puts students against the real world. Can this reality experience be used as a springboard to the traditional disciplines?

2. More flexibility is needed in the curriculum to allow for those students who change their minds about occupational choice before completing the curriculum and "late bloomers" who should still go on to college. Can very early career planning and career development curriculums allow for movement of students from one track to another?

3. Can you narrow a vocational offering to specialized training without rapid obsolescence in terms of machinery, procedure and processes?

4. Do you offer specific vocational or skill training at the high school or post-high school level?

5. Many applicants for employment and many candidates for training programs do not qualify physically. Can modification be made in the training program to alleviate hypertension or obesity(for example) so that employability is insured?

6. Some of our dropouts are psychological dropouts--that is, they are dropouts from the prevailing culture. Can these dropouts be rehabilitated to adapt to this culture?

7. The changing of student attitudes at the elementary and secondary level must occur in order for a vocational program to accomplish its goals. Will providing pocket money through program modification change these student attitudes?

8. The poor family's attitude affects their children. The absence of objectives or goals on the part of these youth, coupled with a lack of feeling of dignity, is a definite problem. Can the presence of work conditioning affect these deficiencies?

9. Has there been an overemphasis on keeping all students in school until a diploma has been earned? Do we need to encourage some students to leave school before graduation with participation in a special program of continuing education?

10. Can prospective vocational teachers who have the skills required for certain vocational courses be given crash offerings to improve communication skills in order to be effective with students?

Category 4: Basic or Applied Research

Basic or applied research activities are conceptual in nature where true or quasi-experimental designs are utilized, or where data are collected in other acceptably rigorous ways. Four examples are listed:

1. The revolution of rising expectations in a highly stratified society has resulted in a proliferation of efforts to break the crust of custom. Yet oen of the major problems of the undertrained is lack of motivation--or lack of motiviation in the traditional context. There is need to know more

about the motivation of the Negro and other minorities so that educators can modify curriculum offerings and teaching methodology accordingly.

2. In an increasing number of instances loss of a job is not for lack of skill but for lack of personal stability. Many students are unemployable in their present emotional state. They have personality defects which militate against the holding of a job. Research studies on personality defects and mental health as related to preparation for employment are needed.

3. Education is spilling over into re-training programs in which we do not give up on people because they have had a misspent youth. One of the key problems is that of language. Everyone has to be trained to communicate: to read and write, listen, speak and follow directions. More needs to be known concerning the communication disabilities of the disadvantaged and effective means of remediation.

4. Students are being trained for work habits and attitudes in various vocational programs upon the assumption that these habits and attitudes are transferable to other work and social settings. Evidence is lacking on the success or failure of this basic assumption concerning today's disadvantaged

In conclusion, let me point out that these questions are not all-inclusive nor are some of them well stated or of high priority, but they do illustrate the kind of issues about which leaders in the field, Boards of Education, and the lay public need facts. Too much decision making has been conducted on a basis of personal experience, personal bias, or because of a "gut-level" hunch.

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